Influenza Surveillance

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Indiana Influenza Surveillance 2003-2004

Influenza surveillance during the 2003-2004 influenza season was conducted in cooperation with the U.S. Centers for Disease Control and Prevention (CDC). Thirty-two Indiana physicians, nurse-managed clinics, emergency departments, immediate care facilities, and university student health centers volunteered to be sentinel physicians/sites. Sentinel reporting locations and number of participating sites are provided in Figure 1.

Surveillance for the 2003-2004 influenza season began the week ending Saturday, September 28, 2003, and continued weekly through May 17, 2004, tracking the numbers of patients presenting to health care providers for "influenza-like illness" (ILI). For the purpose of surveillance, the CDC defines ILI as "Fever (>100^0 F. [37.8^0 C.] oral or equivalent) and cough or sore throat (in absence of a known cause)." In addition to tracking how many patients presented with ILI, participants reported the total number of patients categorized by specified age groups. Sentinel sites submitted weekly reports to the repository at the CDC via the Internet, phone, or fax. Additionally, sentinel participants collected nasopharyngeal swabs from patients with ILI whose onset of classic clinical signs started within 72 hours of the appointment. The swabs were then sent to the Indiana State Department of Health (ISDH) Laboratories. The ISDH Laboratory conducted viral isolation and identification of influenza virus by type and subtype. During the surveillance period, sentinel sites saw 114,780 patients, of which 2,861 sought care for ILI. A health care facility that wishes to participate as a sentinel site should contact Shawn Richards at srichard@isdh.state.in.us.

Figure 2 supports the findings for the percentage of patients seeking care for ILI during the 2003-04 season, as well as a baseline of influenza-like illness for the previous five years.

Figure 1.

Counties with Sentinel Physicians and Number of Participating Sentinel Sites, 2003-2004

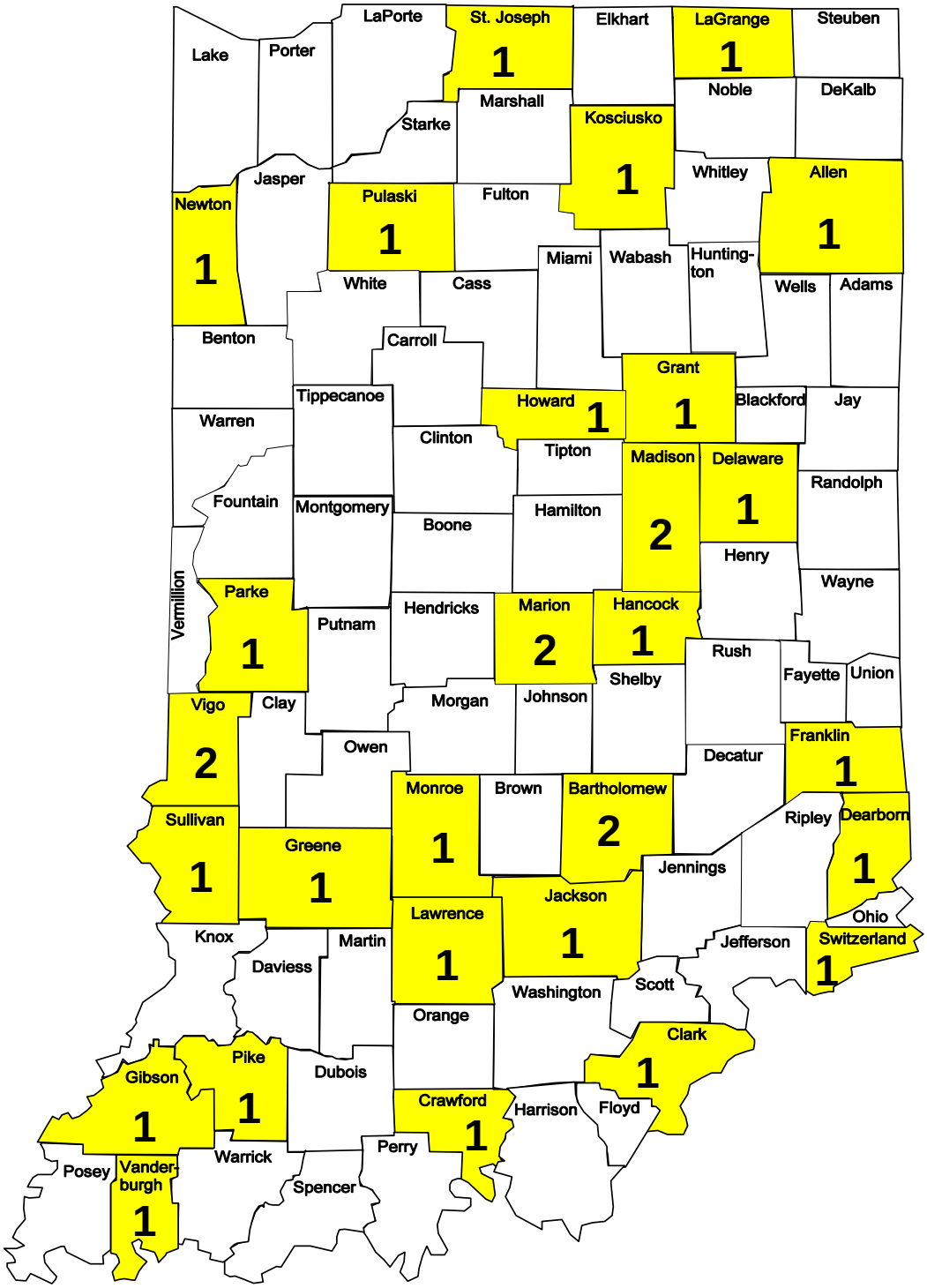
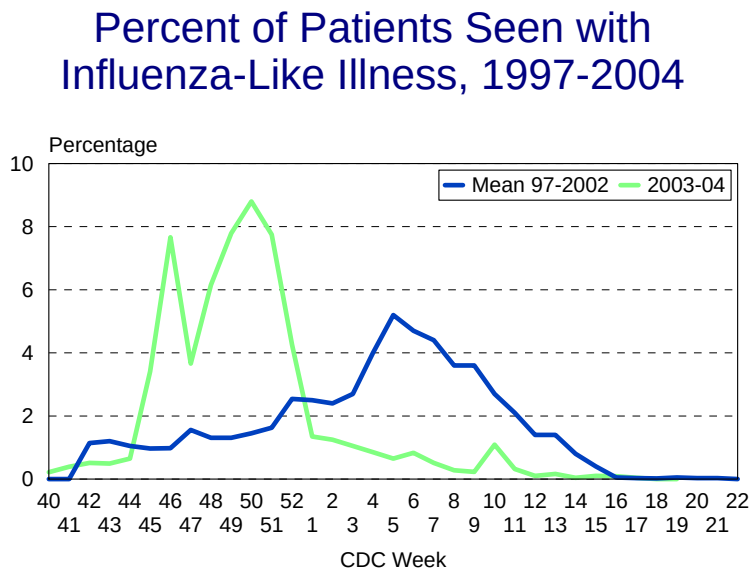


Figure 2.



The index case occurred during the week ending 11/08/03. The specimen was typed as influenza A (H3N2) by the ISDH Laboratories by both isolation and antigen detection. The specimen was obtained from a resident of Delaware County with an illness onset date of 11/04/03. The percentage of patients seen with ILI peaked with the week ending 12/20/03. This was an unusual occurrence as the peak occurs generally 6-8 weeks later after the onset of the index case. Universities in the sentinel program were among the first to communicate with the ISDH as to large amounts of students seen in the health centers for ILI. The alert was heightened after they communicated that several rapid tests had been positive for influenza. The sentinels were asked to submit their specimens to the ISDH Laboratory to identify the virus. This was of particular importance because some other states had reported several deaths of which seemed to hit the pediatric population hard. Influenza A viruses were the only ISDH Laboratory-confirmed influenza viruses throughout Indiana. Two hundred eight (208) nasopharyngeal swabs from the sentinel physicians were submitted for testing to the ISDH Laboratory. One hundred five (50%) of the 208 specimens submitted to the ISDH Laboratory by the sentinel physicians tested positive for influenza. One hundred two (97%) of the positive specimens submitted were sub-typed as influenza A/H3N2/Panama/2007/99-like. One (<1%) of the positive specimens was subtyped as Influenza A/H3N2/Korea/770/2002-like. Two (2%) were influenza A (unable to subtype). Table 1 is provided by the ISDH Laboratories and shows the number of specimens submitted for testing and the results per month.

Table 1. Influenza Summary for 2003-2004

July 2003		
Influenza A (unable to subtype)	1	
August- September 2003		
NO SPECIMENS RECEIVED		
October 2003		
Negative/no virus recovered	2	
Other respiratory virus	1	
November 2003		
Influenza A H3N2/Panama/2007/99-like	22	
Negative/no virus recovered	17	
Unsatisfactory	2	
Other respiratory virus	3	
December 2003		
Influenza A H3N2/Panama/2007/99-like	49	
Influenza A H3N2/Korea/770/2002-like	1	
Influenza A (unable to subtype)	1	
Negative/No virus recovered	66	
Unsatisfactory respiratory specimens	3	
January 2004		
Influenza A H3N2/Panama/2007/99-like	31	
Negative/No virus recovered	3	
Unsatisfactory respiratory specimens	4	
February 2004		
Negative/No virus recovered	2	
Unsatisfactory respiratory specimens	1	
March-April-May 2004		
NO SPECIMENS RECEIVED		
TOTAL FOR 2003-2004		
Influenza A/H3N2/Panama/2007/99-like	102	
Influenza A/H3N2/Korea/770/2002-like	1	
Influenza A (unable to subtype)	2	
TOTAL POSITIVE INFLUENZA A (combined)		105
Negatives	90	
Other Virus	4	
Unsatisfactory	9	
TOTAL INFLUENZA SPECIMENS SUBMITTED (including both negatives and positives)		208

*No Influenza B viruses were isolated during 2003-2004 season.

Influenza Vaccine for the 2004-2005 Season

The trivalent influenza vaccine components for the 2004-2005 season will include:

- A/New Caledonia/20/99-like virus, H1N1
- A/Fujian/411/2002-like virus, H3N2
- B/Shanghai/361/2002-like

These viruses will be used in this year's vaccine because of their growth properties and their representativeness of the anticipated circulating influenza A and B viruses.

Influenza Vaccine Supply and Production

Vaccine manufacturers are projecting 90-100 million doses of vaccine for the 2004-2005 season, although the projected number of doses is greater than last year's total number of vaccine available. Two of the manufacturers, Aventis and Powderject Vaccine (Evans), will produce the influenza vaccine in the injectable form. A list of influena distributors is available by the Health Industry Distributors Association at http://www.hidanetwork.com/govtrelations/flulinks.asp. MedImmune will manufacture the intra-nasal live attenuated virus vaccine. Quality assurance complications at the manufacturer have delayed vaccine shipment until October. However, complications can arise at any stage of the manufacturing process. The ISDH has enhanced their influenza web site which contains Vaccine Information Statements (VIS), storage and handling of influenza vaccine, scheduled influenza clinics, CDC recommendations for who should be vaccinated, and many documents available in the Spanish language. This web site can be accessed at www.statehealth.in.gov/healthinfo/influenza.htm.

Importance of Properly Vaccinated Health Care Workers Against Influenza

In the United States, the primary option for reducing the effect of influenza is immunoprophylaxis with vaccine. Inactivated (i.e., killed virus) influenza vaccine and live, attenuated influenza vaccine are available for use in the United States (see Recommendations for Using Inactivated and Live, Attenuated Influenza Vaccine). Vaccinating persons at high risk for complications and their contacts each year before seasonal increases in influenza virus circulation is the most effective means of reducing the effect of influenza. Vaccination coverage can be increased by administering vaccine to persons during hospitalizations or routine health-care visits before the influenza season, making special visits to physicians' offices or clinics unnecessary (1). When vaccine and epidemic strains are well matched, achieving increased vaccination rates among persons living in closed settings (e.g., nursing homes and other chronic-care facilities) and among staff can reduce the risk for outbreaks by inducing herd immunity (*2*). Beginning in October each year, health-care facilities should offer influenza vaccinations to all personnel, including night and weekend staff. Particular emphasis should be placed on providing vaccinations to persons who care for members of groups at high risk. Efforts should be made to educate health-care personnel regarding the benefits of vaccination and the potential health consequences of influenza illness for themselves and their patients. All health-care personnel should be provided convenient access to influenza vaccine at the work site, free of charge, as part of employee health programs (1). Vaccination for severe influenza illness can also reduce transmission of influenza and subsequent health-care workers and other persons in close contact with persons at increased risk for influenza-related complications. Antiviral drugs used for chemoprophylaxis or

treatment of influenza are key adjuncts to vaccine (see *Recommendations for Using Antiviral Agents for Influenza*). However, antiviral medications are not a substitute for vaccination.

The CDC has published several documents focusing on the importance of influenza vaccination. These resources are available at the following web sites.

Health Care Workers –A Call to Action
www.cdc.gov/mmwr/preview/mmwrhtml/rr5306a1.htm

Respiratory Hygiene and Cough Etiquette
www.cdc.gov/flu/professionals/infectioncontrol/resphygiene.htm

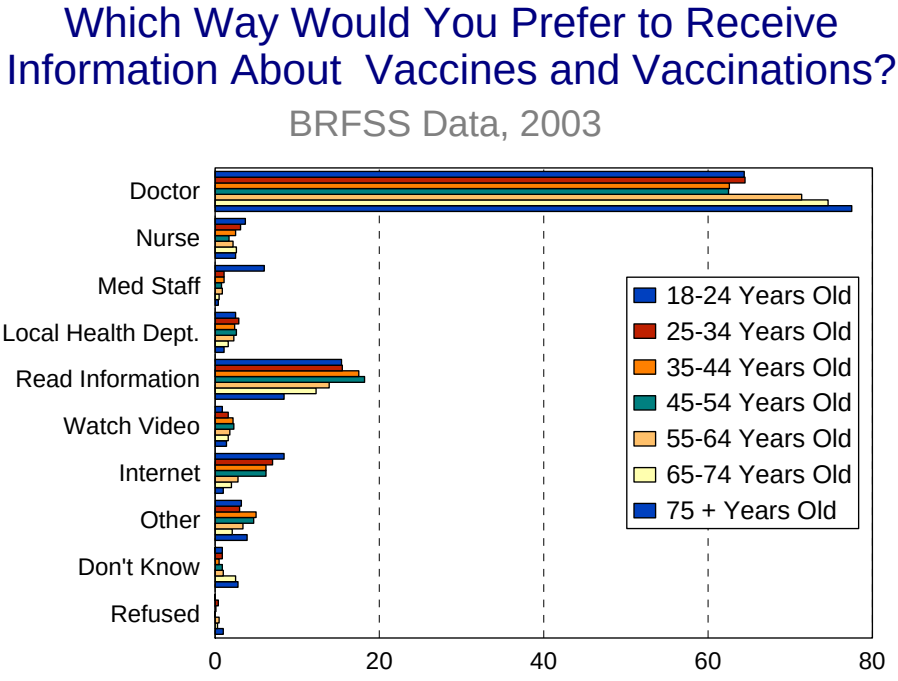
Detection and Control of Influenza Outbreaks in Acute Care Facilities
www.cdc.gov/ncidod/hip/INFECT/flu_flow.htm

Draft Flow Chart for Surveillance and Control of Influenza in Acute Care Facilities
www.cdc.gov/hip/INFECT/flu.htm

BRFSS Data

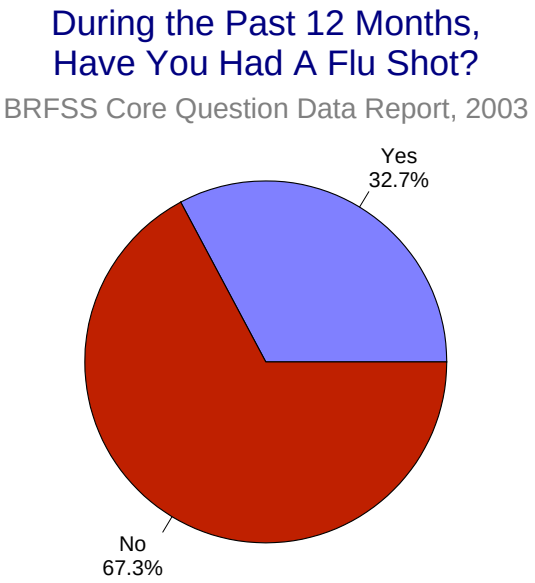
The Behavioral Risk Factor Surveillance Survey (BRFSS) is the largest continuously conducted health survey in the world. It was developed in 1984 by the Centers for Disease Control and Prevention to collect data on major behavioral risk factors that contribute to premature death and disability. Emerging health concerns and other critical health issues are also included in the survey. All 50 states and the District of Columbia participate in this random-dial telephone survey of adults ages 18 years and older. The ISDH added five additional questions on the 2003 BRFSS. One of the questions was added to discover how Indiana citizens prefer to receive information about vaccines and vaccinations. Figure 3 shows the results from the state-added question.

Figure 3.



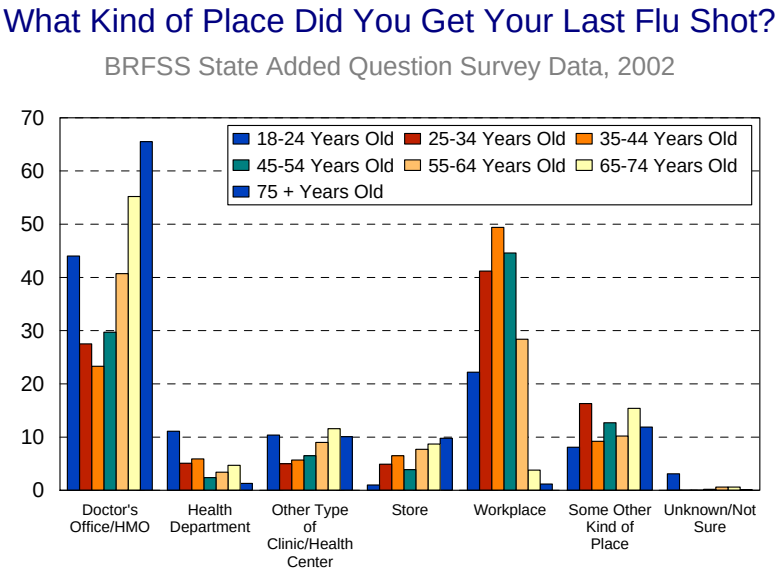
See Figure 4 for the results from the core question, “ During the past 12 months, have you had a flu shot?”

Figure 4.



In 2002 the ISDH added another State-added question, “What kind of place did you get your flu shot?” See Figure 5 for the results from that state-added question.

Figure 5.



References

1. Harper SA, Fukuda K, Uyeki TM, Cox NJ, Bridges CB. Prevention and control of influenza: Recommendations of the advisory committee on immunization practices. MMWR May 28, 2004.

2. Patriarca PA, Weber JA, Parker RA, et al. Risk factors for outbreaks of influenza in nursing homes: a case-control study. Am J Epidemiol 1986;124:114--9.